

Sensitive Plant Survey of BLM Lands  
along the Big Hole River and in the Whitehall Valley

Southwest Montana is an area of high plant species endemism, and many Montana Natural Heritage Program species of concern occur there. Furthermore, species that are candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service are known to occur in the area. These include *Arabis fecunda* and *Penstemon lemhiensis*. The former species occurs only on soils derived from calcareous parent material. Potential habitat for *A. fecunda* occurs on the periphery of the Tobacco Root and Highland ranges, where Mississippian limestone has been contacted by granitic intrusions. Potential habitat for many sensitive species occurs along the Big Hole River.

I conducted rare plant surveys on BLM lands in the Gold Hill and Silver Star areas on 1-2 July 1994. Although the Silver Star area appeared to have good habitat for *A. fecunda*, the species was not present. At both the Silver Star and Gold Hill sites I located populations of *Astragalus platytropis*. I observed serious infestations of leafy spurge (*Euphorbia esula*) in the Gold Hill area.

I conducted rare plant surveys on scattered tracts of BLM land along the Big Hole River between Divide and Jackson on 3-5 July 1994. I located one small population of *Penstemon lemhiensis* on the banks of the river across from Sawlog Creek, and I located a small population of *Arabis fecunda* at the mouth of Jerry Creek. In addition to these C2 species, I located five populations of *Haplopappus macronema* ssp. *linearis* and one population of *Erigeron gracilis*. *Haplopappus macronema linearis* seemed to be widespread in the Big Hole Valley between Dewey and Wisdom, and I imagine that many more populations exist in the area. Furthermore, the plant seems to be most common in areas that have moderate disturbance such as along roads or grazed pastures.

Although I found no rare plants on BLM lands on the east slopes of the Beaverhead Range west of Jackson, there are extensive wetlands in the area including *Sphagnum* fens. These communities are probably sensitive to livestock grazing. Vegetative composition should be documented and mapped to facilitate proper management.

Peter Lesica  
September 1994

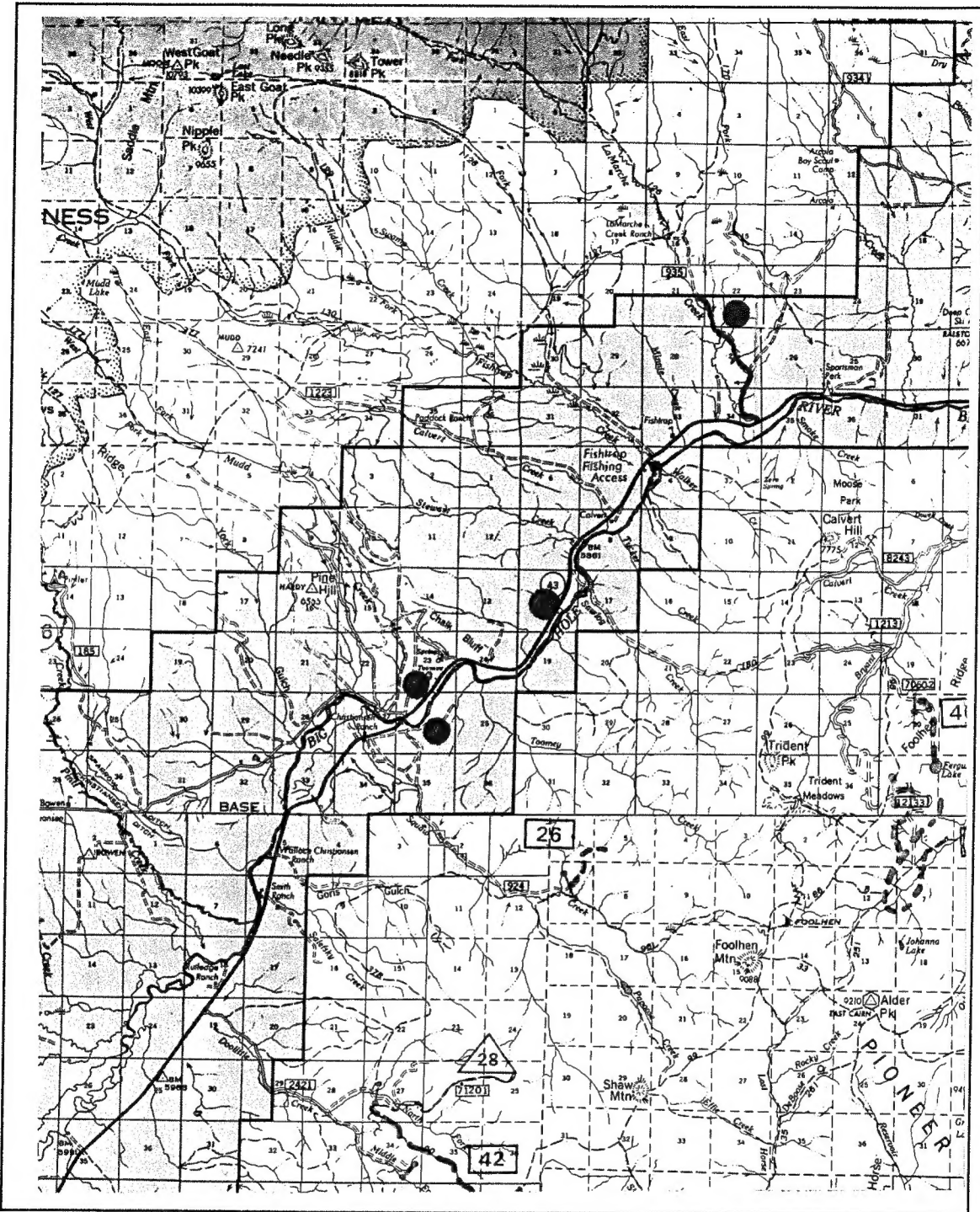


Figure 1. Location of 1994 surveys  
 — roads driven  
 ● hiking surveys

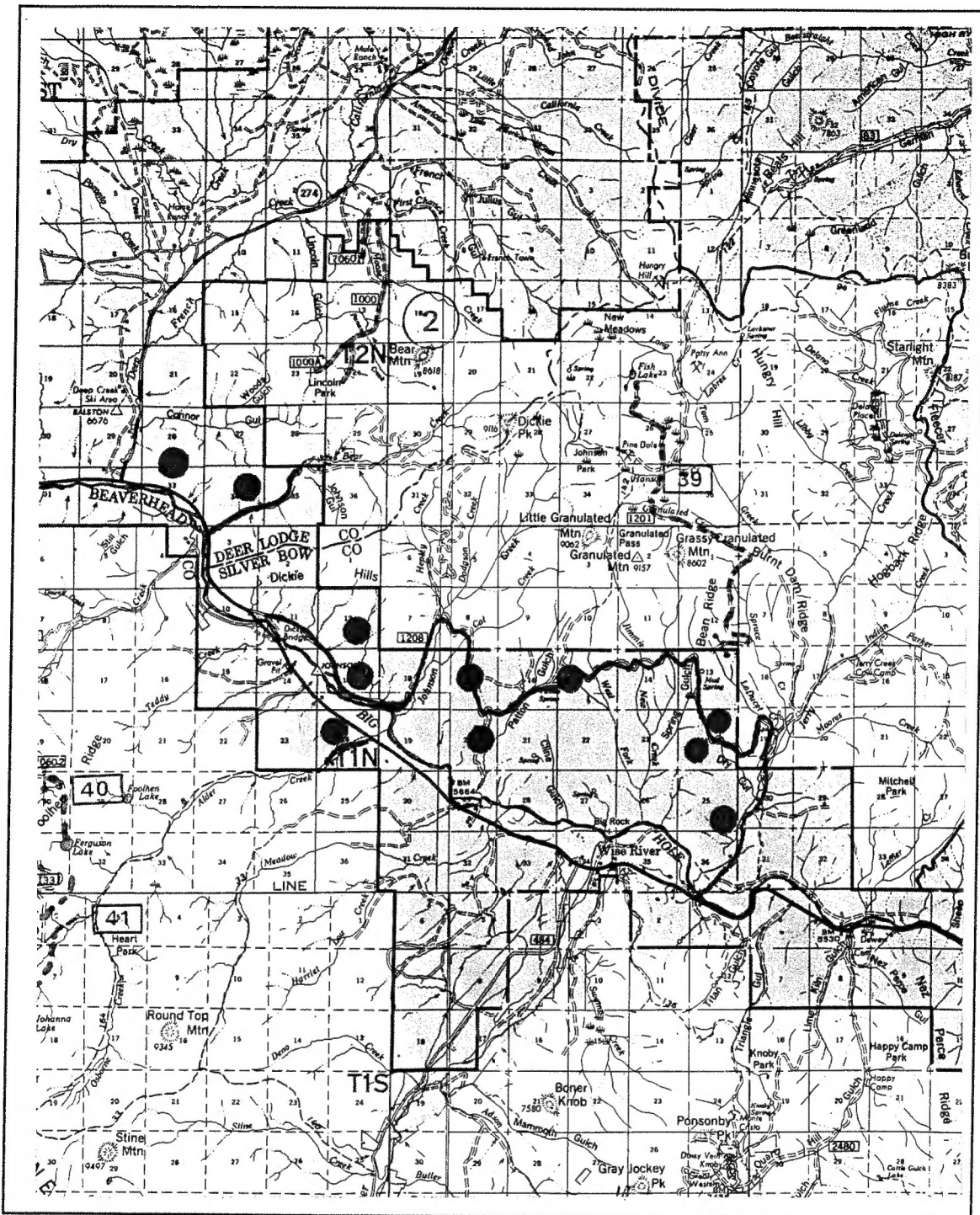


Figure 2. Location of rare plant surveys  
 — roads driven  
 ● hiking surveys

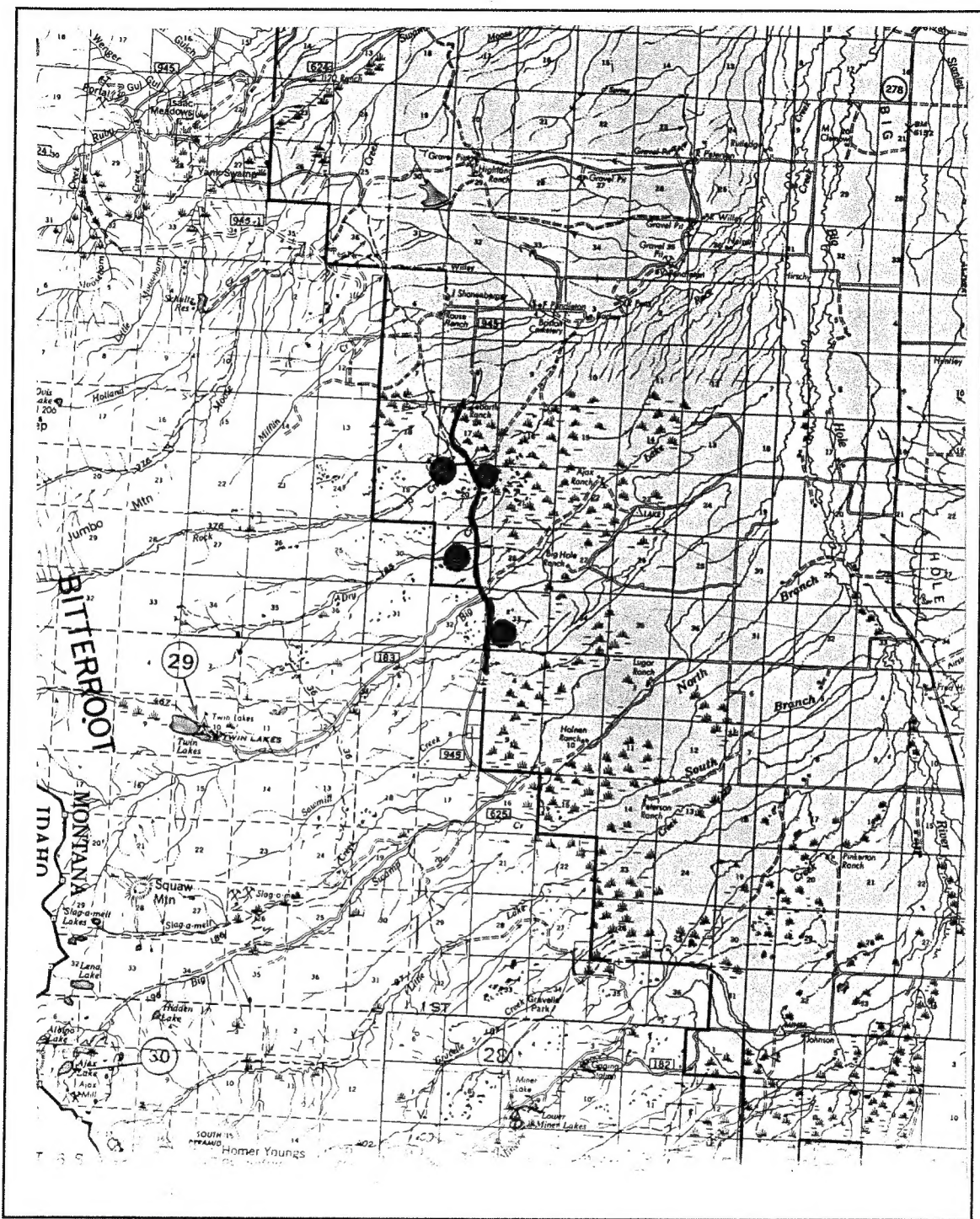


Figure 3. Location of rare plant surveys  
 — roads driven  
 ● hiking surveys

MONTANA NATURAL HERITAGE PROGRAM  
Element Occurrence Record

Scientific Name: ARABIS FECUNDA  
Common Name: SAPPHIRE ROCKCRESS

Global rank: G2      Forest Service status: SENSITIVE  
State rank: S2      Federal Status: C2

Element occurrence code: PDBRA06290.007  
Element occurrence type:

Survey site name: JERRY CREEK  
EO rank: B  
EO rank comments: LARGE POPULATION BUT HEAVY GRAZING.

County: SILVER BOW

USGS quadrangle: WISE RIVER

Township:	Range:	Section:	TRS comments:
001N	010W	31	SW4
001N	011W	36	SE4
001N	011W	25	SE4SE4

Precision: S  
Survey date: 1988-06-07      Elevation: 5600 - 5960  
First observation: 1988      Slope/aspect:  
Last observation: 1994-07-03      Size (acres): 31

Location:

CA. 1.5 MILES EAST OF WISE RIVER, MT, ON HIGHWAY 43, NE ON JERRY CREEK  
ROAD 0.3 MILE; HILLSIDES AND OUTCROPS EAST OF ROAD.

Element occurrence data:

1988: CA. 5,050 PLANTS IN 2 SOUTHERN SUBPOPULATIONS, FLOWERING AND  
FRUITING; THREATENED BY OVERGRAZING. 1994: CA. 500 PLANTS IN 2  
NORTHERN SUBPOPULATIONS, MATURE FRUIT.

General site description:

CALC-SILICATE OUTCROPS & HILLSIDES IN DRY, OPEN SANDY SOILS, BENEATH  
JUNIPERUS SCOPULORUM AND PSEUDOTSUGA MENZIESII, WITH CERCOCARPUS  
LEDIFOLIUS, ERIGERON COMPOSITUS, AGROPYRON SPICATUM, ARTEMISIA  
FRIGIDA, HAPLOPAPPUS ACAULIS, PENSTEMON ARIDUS.

Land owner/manager:

BLM: BUTTE DISTRICT, HEADWATERS RESOURCE AREA  
STATE LAND - UNDESIGNATED

Comments:

Information source: SCHASSBERGER, L. A. 1988. [FIELD SURVEY IN  
SOUTHWESTERN MONTANA OF 1-3, 6-7 AND 13-15 JUNE  
(ARABIS FECUNDA).]

Specimens: LESICA, P. (6356). 1994. MONTU.  
SCHASSBERGER, L.A. (207). 1988. MONTU.



MONTANA NATURAL HERITAGE PROGRAM  
Element Occurrence Record

Scientific Name: ASTRAGALUS PLATYTROPIS

Common Name: BROAD-KEELED MILKVETCH

Global rank: G5 Forest Service status:

State rank: S2 Federal Status:

Element occurrence code: PDFAB0F6X0.012

Element occurrence type:

Survey site name: BONE BASIN CREEK

EO rank: C

EO rank comments: SMALL POPULATION WITH SOME LIVESTOCK GRAZING.

County: MADISON

USGS quadrangle: WHITEHALL

Township: Range: Section: TRS comments:

001N 004W 27 SW4

Precision: S

Survey date: 1994-07-01 Elevation: 4600 - 4660

First observation: 1994-07-01 Slope/aspect: LEVEL

Last observation: 1994-07-01 Size (acres): 15

Location:

SITE IS 0.5 MILE EAST OF PARROT ROAD CA. 0.5 MILE SOUTH OF PARROT  
CASTLE FISHING ACCESS SITE.

Element occurrence data:

100-200 PLANTS, IN FRUIT.

General site description:

DRY, OPEN RESIDUAL MOUNTIAN CREST. LIMESTONE PARENT MATERIAL, SANDY  
SOIL. ASSOCIATED SPECIES: AGROPYRON SPICATUM, STIPA COMATA, ORYZOPSIS  
HYMENOIDES, PARONYCHIA SESSILIFLORA, HAPLOPAPPUS ACAULIS, ERIOGONUM  
MANCUM.

Land owner/manager:

PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:

LIGHT LIVESTOCK GRAZING AND WEEDS IN AREA NOTED.

Information source: LESICA, PETER. DIVISION OF BIOLOGICAL SCIENCES,  
UNIVERSITY OF MONTANA, MISSOULA, MT 59812.

Specimens: LESICA, P. (6342). 1994. MONTU.

MONTANA NATURAL HERITAGE PROGRAM  
Element Occurrence Record

Scientific Name: ASTRAGALUS PLATYTROPIS  
Common Name: BROAD-KEELED MILKVETCH

Global rank: G5 Forest Service status:  
State rank: S2 Federal Status:

Element occurrence code: PDFAB0F6X0.013  
Element occurrence type:

Survey site name: TOM BENTON GULCH  
EO rank: B  
EO rank comments: MODERATELY-SIZED POPULATION, DISTURBED BY MINING.

County: MADISON

USGS quadrangle: SILVER STAR

Township: Range: Section: TRS comments:  
002S 006W 10 NE4; 2 SW4; 3 NE4; 15 NE4; 14 NW4

Precision: S  
Survey date: 1994-07-02 Elevation: 4800 - 5600  
First observation: 1994-07-02 Slope/aspect: 30% / NORTH  
Last observation: 1994-07-02 Size (acres): 1000

Location:

FROM SOUTH END OF SILVER STAR, TAKE MAIN ROAD TO WEST CA. 1.6 MILES.  
SUBPOPULATIONS LIE ALONG GREEN CAMPBELL MINE ROAD, ALONG TRAIL ON  
SOUTH RIDGE OF BLACKMAN GULCH, AND ALONG 4-WHEEL DRIVE TRAIL BETWEEN  
THE TWO.

Element occurrence data:

100-500 PLANTS IN 6 OR MORE SUBPOPULATIONS, MATURE FRUIT.

General site description:

DRY, OPEN RESIDUAL MOUNTAIN SLOPES. LIMESTONE PARENT MATERIAL, SANDY  
SOIL. ASSOCIATED SPECIES: AGROPYRON SPICATUM, KOELERIA CRISTATA,  
CERCOCARPUS LEDIFOLIUS, CAREX FILIFOLIA, ARTEMISIA FRIGIDA,  
HAPLOPAPPUS ACAULIS, ERIOGONUM MANCUM.

Land owner/manager:

BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

Comments:

DISTURBANCE BY MINING AND ROADS.

Information source: LESICA, PETER. DIVISION OF BIOLOGICAL SCIENCES,  
UNIVERSITY OF MONTANA, MISSOULA, MT 59812.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM  
Element Occurrence Record

Scientific Name: HAPLOPAPPUS MACRONEMA VAR LINEARIS  
Common Name: LINEAR-LEAVED DISCOID GOLDENWEED

Global rank: G4T? Forest Service status:  
State rank: S2 Federal Status:

Element occurrence code: PDAST4F0U3.006  
Element occurrence type:

Survey site name: PATTON GULCH  
EO rank: B  
EO rank comments: FAIRLY LARGE POPULATION, HEAVILY GRAZED.

County: SILVER BOW

USGS quadrangle: WISE RIVER

Township: Range: Section: TRS comments:  
001N 011W 15 NW4SW4

Precision: S  
Survey date: 1994-07-03 Elevation: 6900 -  
First observation: 1994-07-03 Slope/aspect: 5% / NORTH  
Last observation: 1994-07-03 Size (acres): 2

Location:

FROM HWY 43 (CA. 2.3 MILES WEST OF WISE RIVER), TAKE PATTON CREEK ROAD  
NORTH CA. 2.5 MILES TO MAIN FORK IN ROAD. TAKE LEFT FORK UP HILL CA.  
1.5 MILES TO SITE.

Element occurrence data:

>500 PLANTS, DEVELOPING FLOWERS.

General site description:

DRY, OPEN, LOWER RESIDUAL MOUNTAIN SLOPE. QUARTZITE PARENT MATERIAL,  
SILTY SOIL. ASSOCIATED SPECIES: ARTEMISIA TRIDENTATA, POA PRATENSIS,  
KOELERIA CRESTATA, PENSTEMON PROCERUS, TARAXACUM OFFICINALIS,  
CHRYSOTHAMNUS VISCIDIFLORUS, ERIOGONUM UMBELLATUM, ANTENNARIA  
MICROPHYLLA.

Land owner/manager:

BLM: BUTTE DISTRICT, HEADWATERS RESOURCE AREA

Comments:

EVIDENCE OF PAST HEAVY GRAZING.

Information source: LESICA, PETER. DIVISION OF BIOLOGICAL SCIENCES,  
UNIVERSITY OF MONTANA, MISSOULA, MT 59812.

Specimens: LESICA, P. (6354). 1994. MONTU.



MONTANA NATURAL HERITAGE PROGRAM  
Element Occurrence Record

Scientific Name: HAPLOPAPPUS MACRONEMA VAR LINEARIS  
Common Name: LINEAR-LEAVED DISCOID GOLDENWEED

Global rank: G4T? Forest Service status:  
State rank: S2 Federal Status:

Element occurrence code: PDAST4F0U3.007  
Element occurrence type:

Survey site name: PATTON GULCH  
EO rank: C  
EO rank comments: SMALL POPULATION WITH SOME DISTURBANCE FROM  
LIVESTOCK GRAZING.

County: SILVER BOW

USGS quadrangle: WISE RIVER

Township: Range: Section: TRS comments:  
001N 011W 17 NE4 SW4; 20 SE4 NE4

Precision: S  
Survey date: 1994-07-03 Elevation: 6240 - 6800  
First observation: 1994-07-03 Slope/aspect: 20% / WEST  
Last observation: 1994-07-03 Size (acres): 1

Location:

FROM WISE RIVER, TAKE HWY 43 TO PATTON CREEK ROAD. KEEP TO THE LEFT ON  
PATTON CREEK ROAD AND TRAVEL CA. 1.5 MILES TO SOUTHERN POPULATION AND  
CONTINUE CA. 1.5 MILES FARTHER TO NORTHERN POPULATION.

Element occurrence data:

>100 PLANTS IN 2 SUBPOPULATIONS, IN FLOWER BUD. PROBABLY OTHER  
SUBPOPULATIONS IN THE AREA.

General site description:

DRY, OPEN, UPPER RESIDUAL MOUNTAIN SLOPE. QUARTZITE PARENT MATERIAL,  
SILTY SOIL. ASSOCIATED SPECIES: ARTEMISIA TRIDENTATA, FESTUCA  
IDAHOENSIS, ANTENNARIA MICROPHYLLA, CASTILLEJA PALLESCENS, ARENARIA  
CAPILLARIS.

Land owner/manager:

BLM: BUTTE DISTRICT, HEADWATERS RESOURCE AREA

Comments:

PLANTS SEEM TO OCCUR ALONG OLD ROADS. DISTURBANCE BY LIVESTOCK  
GRAZING.

Information source: LESICA, PETER. DIVISION OF BIOLOGICAL SCIENCES,  
UNIVERSITY OF MONTANA, MISSOULA, MT 59812.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM  
Element Occurrence Record

Scientific Name: HAPLOPAPPUS MACRONEMA VAR LINEARIS  
Common Name: LINEAR-LEAVED DISCOID GOLDENWEED

Global rank: G4T? Forest Service status:  
State rank: S2 Federal Status:

Element occurrence code: PDAST4F0U3.008  
Element occurrence type:

Survey site name: BIG HOLE RIVER  
EO rank: C  
EO rank comments: SMALL POPULATION WITH SOME GRAZING.

County: DEER LODGE

USGS quadrangle: LINCOLN GULCH

Township: Range: Section: TRS comments:  
002N 012W 33 NW4

Precision: S  
Survey date: 1994-07-04 Elevation: 5800 -  
First observation: 1994-07-04 Slope/aspect: 15% / SW  
Last observation: 1994-07-04 Size (acres): 1

Location:

FROM JUNCTION OF HWY 43 AND THE HIGHWAY TO ANACONDA, GO EAST ON HWY 43  
0.5 MILE. SITE IS ALONG FENCELINE.

Element occurrence data:  
50-100 PLANTS, FLOWERING.

General site description:

DRY, OPEN LOWER RESIDUAL MOUNTAIN SLOPE. QUARTZITE PARENT MATERIAL,  
SILTY SOIL. ASSOCIATED SPECIES: ARTEMISIA TRIDENTATA, AGROPYRON  
SPICATUM, FESTUCA IDAHOENSIS, LUPINUS LEUCOPHYLLUS, ERIOGONUM  
UMBELLATUM, LITHOSPERMUM RUDERALE.

Land owner/manager:

PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)  
BLM: BUTTE DISTRICT, HEADWATERS RESOURCE AREA

Comments:

LIGHT LIVESTOCK GRAZING IN AREA.

Information source: LESICA, PETER. DIVISION OF BIOLOGICAL SCIENCES,  
UNIVERSITY OF MONTANA, MISSOULA, MT 59812.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM  
Element Occurrence Record

Scientific Name: HAPLOPAPPUS MACRONEMA VAR LINEARIS  
Common Name: LINEAR-LEAVED DISCOID GOLDENWEED

Global rank: G4T? Forest Service status:  
State rank: S2 Federal Status:

Element occurrence code: PDAST4F0U3.009  
Element occurrence type:

Survey site name: BIG HOLE RIVER  
EO rank: C  
EO rank comments: SMALL POPULATION.

County: DEER LODGE

USGS quadrangle: PINE HILL

Township: Range: Section: TRS comments:  
001N 013W 18 NE4

Precision: S  
Survey date: 1994-07-04 Elevation: 5980 -  
First observation: 1994-07-04 Slope/aspect: 20% / WEST  
Last observation: 1994-07-04 Size (acres): 1

Location:

SITE IS ALONG BIG HOLE RIVER AT SAWLOG FISHING ACCESS CA. 2 MILES  
SOUTHWEST OF FISHTRAP ACCESS.

Element occurrence data:

>100 PLANTS, BEGINNING TO FLOWER.

General site description:

DRY, OPEN LOWER RESIDUAL MOUNTAIN SLOPE. SILTY SOIL. ASSOCIATED  
SPECIES: ARTEMISIA TRIDENTATA, CHRYSOTHAMNUS VISCIDIFLORUS, FESTUCA  
IDAHOENSIS, LUPINUS SERICEUS, ANTENNARIA MICROPHYLLA, ERIOGONUM  
UMBELLATUM.

Land owner/manager:

BLM: BUTTE DISTRICT, HEADWATERS RESOURCE AREA  
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:

DISTURBANCE BY RECREATION, SOME GRAZING, AND ROADS.

Information source: LESICA, PETER. DIVISION OF BIOLOGICAL SCIENCES,  
UNIVERSITY OF MONTANA, MISSOULA, MT 59812.

Specimens: LESICA, P. (6361). 1994. MONTU.

MONTANA NATURAL HERITAGE PROGRAM  
Element Occurrence Record

Scientific Name: HAPLOPAPPUS MACRONEMA VAR LINEARIS  
Common Name: LINEAR-LEAVED DISCOID GOLDENWEED

Global rank: G4T? Forest Service status:  
State rank: S2 Federal Status:

Element occurrence code: PDAST4F0U3.010  
Element occurrence type:

Survey site name: BIGHOLE CREEK  
EO rank: C  
EO rank comments:

County: BEAVERHEAD  
DEER LODGE

USGS quadrangle: PINE HILL

Township: Range: Section: TRS comments:  
001N 014W 26 W2

Precision: S  
Survey date: 1994-07-04 Elevation: 5950 - 6100  
First observation: 1994-07-04 Slope/aspect: 5-10% / SW  
Last observation: 1994-07-04 Size (acres): 5

Location:

SITES ARE NEAR MUDD CREEK BRIDGE OVER BIG HOLE RIVER ON HWY 93.

Element occurrence data:

>100 PLANTS IN AT LEAST 2 SUBPOPULATIONS, IN EARLY FLOWERING.

General site description:

DRY, OPEN, LOWER TO MID-RESIDUAL MOUNTAIN SLOPES, SILTY SOIL.  
ASSOCIATED SPECIES: ARTEMISIA TRIDENTATA, CHRYSOTHAMNUS VISCIDIFLORUS,  
FESTUCA IDAHOENSIS, LUPINUS SERICEUS, ANTENNARIA MICROPHYLLA,  
ERIOGONUM UMBELLATUM.

Land owner/manager:

BLM: BUTTE DISTRICT, DILLON RESOURCE AREA  
BLM: BUTTE DISTRICT, HEADWATERS RESOURCE AREA

Comments:

DISTURBANCE BY ROADS, GRAVEL PIT, AND LIVESTOCK GRAZING.

Information source: LESICA, PETER. DIVISION OF BIOLOGICAL SCIENCES,  
UNIVERSITY OF MONTANA, MISSOULA, MT 59812.

Specimens:

MONTANA NATURAL HERITAGE PROGRAM  
Element Occurrence Record

Scientific Name: PENSTEMON LEMHIENSIS

Common Name: LEMHI BEARDTONGUE

Global rank: G3 Forest Service status: SENSITIVE

State rank: S2 Federal Status: C2

Element occurrence code: PDSCR1L3N0.058

Element occurrence type:

Survey site name: SAWLOG

EO rank: C

EO rank comments: SMALL POPULATION.

County: DEER LODGE

USGS quadrangle: PINE HILL

Township: Range: Section: TRS comments:

001N 013W 18 SE4; SE4NE4

Precision: S

Survey date: 1994-07-04 Elevation: 5850 - 5980

First observation: 1993-07-12 Slope/aspect: 10-60% / EAST, SOUTH

Last observation: 1994-07-04 Size (acres): 2

Location:

FROM WISDOM TRAVEL NORTH CA. 18 MILES ON HWY 43 TO MILE MARKER 45.

POPULATION IS ON LEFT SIDE OF HIGHWAY AT SAWLOG FISHING ACCESS.

Element occurrence data:

1993: 84 PLANTS, 90% FLOWERING, 10% VEGETATIVE. 2 SUBPOPULATIONS.

1994: NEW EASTERN SUBPOPULATION WITH CA. 20 PLANTS, 60% FLOWERING, 40% VEGETATIVE.

General site description:

OPEN, DRY LOWERSLOPE BREAKLANDS. GRANITE PARENT MATERIAL, COARSE SANDY LOAM SOIL. ASSOCIATED SPECIES: AGROPYRON SPICATUM, CHRYSOTHAMNUS VISCIFLORUS, ARTEMISIA TRIDENTATA, ARTEMESIA FRIGIDA, ACHILLEA MILLEFOILUM, TRAGOPOGON DUBIUS, POLEMONIUM MICRANTHUM, ERIOGONUM CAPISTRATUM, ARENARIA CONGESTA, PINUS FLEXILIS, PSEUDOTSUGA MENZIESII, POA PRATENSIS, GALIUM BOREALE.

Land owner/manager:

BLM: BUTTE DISTRICT, DILLON RESOURCE AREA

BEAVERHEAD NATIONAL FOREST, WISDOM RANGER DISTRICT

Comments:

OBSERVED BY QUINN CARVER IN 1993. DISTURBANCE BY ROADCUT. 1990 INTERAGENCY MAP SHOWS SITE UNDER BLM OWNERSHIP; USFS OWNERSHIP INDICATED BY OBSERVER. 1994: DISTURBANCE BY RIVER, ROAD ABOVE SITE, AND FISHERMEN WALKING THROUGH.

Information source: LESICA, PETER. DIVISION OF BIOLOGICAL SCIENCES,  
UNIVERSITY OF MONTANA, MISSOULA, MT 59812.

Specimens: LESICA, P. (6358). 1994. MONTU.